			Space-Based Machine Automated Recognition Technique (SMART) Program	m	1		
			SMART BAA 19-04 UPDATED PROPOSAL DUE DATE: 21 APRIL 2020 @ 4:00 P.M. EDT				
			NOTICE: IARPA will accept questions until March 6, 2020 @ 5:00 P.M. EST - via email at iarpa-baa Industry Questions and Government Answers - ROUND 4 03-19-2020	a-19-04@iarpa.gov			
n	Question umber uestion 33	GENERAL INSTRUCTIONS round 3	Industry Questions Is there a time on March 6 when questions need to be in by? Is that COB March 6, 2020	Paragraph & Page # Page 6	Government Responses IARPA will accept questions until March 6, 2020 @ 5:00 P.M. EST - via email at iarpa-	(Yes/No)	Paragraph & Page # Page #6
			and does COB equate to 5:00 PM EST?		baa-19-04@iarpa.gov		8
q	Question umber uestion 11	Section 1 - TECHNICAL PROGRAM OVERVIEW round 2	Regarding the IARPA Smart BAA, I would like a clarification.	Page 17 "TA-2:	The SMART program calls for the system to operate online as well as off-line. Online	No	
q	uestion 12 uestion 13 uestion 14 uestion 15	round 2 round 2 round 2 round 2	Question regarding a possible typo in the SMART BAA (IARPA-BAA-19-04). Does the dataset to be analyzed have to be space-based or can it be a large geophysical dataset The first four metrics in Table 1 are not defined anywhere in the document. What does Aerosol Optical Depth is not mentioned elsewhere in the BAA outside of Table 1. Do we need to	Ü	The > 8,000 square meters references the minimum size of the area, in which an event or The goal of the SMART program is to automate the quantitative analysis of space-based Absolute radiometric calibration is a process that converts the voltage recorded by a Calibration techniques for absolute calibration often rely on in-situ measurements (e.g.,	Yes No No No	See BAA Page 10, paragraph 3 - under "Technical Area-1: See BAA summary of the program page 6.
q	uestion 18	round 2 round 2 round 2	Table 1 gives a metric threshold on False Positive Rate (FPR), but this rate is not defined in How is the time accuracy metric (last row of Table 1) assessed? Is it expected that the entire What is the size of the data to be addressed across the program phases? The proposers day by a fine indicates regional (150km x 150km) in Phase 1, 10 x regional in Phase 2, and global in	Table 1: Page Table 1: Page 25 Page 10 under	The fraction of Non-Relevant events or activities (or sequential phases) that are incorrectly The metric relates to identification of an individual event or activity phase within the The > 8,000 square meters references the minimum size of the area, in which an event or activity Porformers will be asked to identify accurs within a broad search area.	No No No	
q	uestion 19 uestion 20 uestion 21	round 3 round 3	Per section 1.H.2 sites visits are required up to four times per year. Will all subcontractors be required to attend every site visit in nerson, or is it nossible for them to ioin remotely? Is this BAA intended to be limited to only satellite or airborne electro-optical data sources and not include satellite based synthetic anerture radar (such as Sentinel 1)? Are "The goal of TA-2 is to develop algorithms capable of BAS over		Team members can join site visits remotley. See response to question 13. See answer to question no. 12. The Government will evaluate the capability per its	no	See BAA Section 5.A.1 (a-e), pages 48 thru 49.
q	uestion 22 uestion 23	round 3	areas >8,000 square meters". Is "8,000 square meters" the metric you are looking at? What data will be provided to TA-2 only performers specifically as TA1 performers develop datacube/calibration/correction/registration methodologies? Will the T&E team provide datacube-like data for TA2 only performers? What is the		overall scientific and technical merit, effectiveness of propossed work plan, contribution Prototype systems will be demonstrated, leveraging the developed SMART Datacube. See response to question 22.	no	(w o), pages to that it
q	uestion 24	round 3	expectation from IARPA about TA2 performers handling TA1 scope – i.e. data fusion? Should TA2 only performers should plan to collaborating with TA1 performers? Are there any restrictions to such collaboration? Incoming data needs to be normalized to a common data format, what is the desired		Collaborative efforts and teaming among Offerors are highly encouraged. The Government will be seeking feedback from Performers on the GFI version of the	no no	
-	uestion 26 uestion 34	round 3 round 4	What are the critical key features that must be supported in the normalized format? Is the type of air-borne sensor data identified that may be provided as a part of the contract?		See response to question 25. The SMART program's primary objective is to develop quantitative tools and techniques for automated broad-area search (BAS) to detect, monitor, and characterize	no	
					the progression of natural or anthropogenic events or activities using time-series spectral imagery from multiple space-based or air-borne sensors.		
q	uestion 35	round 4	Is the order of precedence for optimization of the data cube, #1 performance, # 2 data fusion, #3 ease of use for petabyte-scale scientific data analysis of satellite images in space and time?		The Datacube must optimize 1) performance, 2) data fusion, and 3) ease of use for petabyte-scale scientific data analysis of satellite images in space and time.		
	uestion 36	round 4	Is 8,000 square meters supposed to be >8000 square km? Will the Continuous Integration and Continuous Development (CICD) Framework		The > 8,000 square meters references the minimum size of the area, in which an event or activity Performers will be asked to identify occurs within a broad search area. Framework will be similar to the following:		
q	uestion 38	round 4	documents be provided? What is IARPA's expectation for the Research Data Management Plan (RDMP), supplied as a part of section 3 L and 3M compared to the RDMP supplied in section 4 as		https://pdfs.semanticscholar.org/a2ab/15b2e3c8478158454995e15067f4ca0b1fd8.pdf Submit a RDMP that outlines how they will manage and preserve the Research Data, as defined below, collected or produced through the course of performance. RDMP		
q	uestion 39	round 4	Do ground truth data collects fall under R&D needs and only need to be provided to the Government with the expectation that the data may be used by the USG and its		(estimated as 2 to 3 pages). Template provided in Appendix A.6. Offerors are encouraged to propose additional imagery from other sources, subject to approval by the Government of the imagery corpus and particular conditions for use.		
			contractors (including all branches, departments, agencies, and offices and research and applications communities, private industry, academia, and non-profit organizations)?		Specifically, in the unconstrained data regime, Offerors may not use proprietary datasets, unless these datasets are made available to all Performers in the SMART program without restriction.		
q	uestion 40	round 4	Our company has developed a software architecture and specific algorithms that may address many of the IARPA SMART deliverables. How will IARPA view a proposal based on access to components of this software under Limited Rights?		This is a business decision on the part of the offeror in developing its technical and cost proposals. The proposal shall provide the detailed, in-depth discussion of the proposed research as well as supporting information about the Offeror's capabilities and		See BAA Sections 4.B.1.d - page 42 Attachment 2 and 6.B.2 -Intellectual Property, page 51, paragraph 2 for more details on intellectual property (IP). See BAA
					resources. The Offeror's cost proposal shall contain sufficient factual information to establish the Offeror's understanding of the project, the perception of project risks, the ability to organize and perform the work and to support the realism and reasonableness of the proposed cost, to the extent appropriate.		Section 5.A Technical and Funding Availability Evaluation Factors - page 48 - 49.
q	uestion 41	round 4	Our company has developed software components that are directly relevant to the IARPA SMART program and are accessible to commercial customers via calls to APIs. How will IAPPA views a proposal based on excess to these APIs?		This is a business decision on the part of the offeror in developing its technical and cost proposals. The proposal shall provide the detailed, in-depth discussion of the proposed		See BAA Sections 4.B.1.d - page 42 Attachment 2 and 6.B.2 -Intellectual Property, page 51, paragraph 2 for many details an intellectual property (IR). See PAA
			IARPA view a proposal based on access to these APIs?		research as well as supporting information about the Offeror's capabilities and resources. The Offeror's cost proposal shall contain sufficient factual information to establish the Offeror's understanding of the project, the perception of project risks, the ability to organize and perform the work and to support the realism and reasonableness		more details on intellectual property (IP). See BAA Section 5.A Technical and Funding Availability Evaluation Factors - page 48 - 49.
q	uestion 42	round 4	The goal of TA-2 is to develop algorithms capable of BAS over areas >8,000 square meters". Is "BAS over 8,000 square meters" the metric you are looking at? Would it be		of the proposed cost, to the extent appropriate. The > 8,000 square meters references the minimum size of the area, in which an event or activity Performers will be asked to identify occurs within a broad search area.		
a	uestion 43	round 4	of benefit to do such a BAS over areas > 8,000 square kilometers? If so, how would such a capability be evaluated? How will the government evaluate an offer for solely proprietary technology or a hybrid		The SMART program will emphasize creating and leveraging open source technology	no	See BAA Sections 4.B.1.d - page 42 Attachment 2 and
			offer (including some open source and some proprietary technology)?		and architectures. Offerors are discouraged from proposing solutions based on proprietary technologies. It is intended that future applied research efforts be able to make effective and immediate use of the results of the SMART program and to easily add, remove, substitute, and modify software components. Because open algorithms		6.B.2 -Intellectual Property, page 51, paragraph 2 for more details on intellectual property (IP). See BAA Section 5.A Technical and Funding Availability Evaluation Factors - page 48 - 49.
					facilitate rapid innovation by providing a base for future users or developers of program technologies and deliverables, a non-proprietary, open approach to IP is preferred. The Government will evaluate proposals on the basis of technical and funding availability factors as outlined in Section 5.A		Tago to 191
q	uestion 44	round 4	Will the lack of an academic partner adversely impact the proposer?		Collaborative efforts and teaming arrangements among potential Offerors are strongly encouraged. Specific content, communications, networking and team formations are the	no	
q	uestion 45	round 4	Is it expected that all subcontractor key personnel should attend all site visits, the PDR, and the CDR? This would generate a significant amount of travel for large teams. Can		Team members can join site visits remotely		
q	uestion 46	round 4	subcontractors attend some site visits remotely by video call? Is it intended that the PDR and CDR do not coincide with regular site visits? Currently they are each one month before a site visit. It would seem more logical to align them with		There is potential to re-align with site visits.		
q	uestion 47	round 4	site visits. Site visits at months 18 and 36 are at phase boundaries, immediately following the PI Workshops and preceding next phase kick-off. These site visits seem redundant with the		See reponses to questions 46.		
q	uestion 48	round 4	PI Workshops and kickoffs. Can you confirm that these site visits are indeed intended? Is there an expectation that the analytical tools developed under the program be implemented within the SMART Datacube, or externally?	Page 11	Analytical tools will make use of the SMART datacube as decribed on Page 11		
q	uestion 49	round 4	Satellite imagery from Landsat, Sentinel, etc., are available as geo-registered and orthorectified products. Can we assume that we can use these products as our starting point, and apply further corrections if necessary to meet program metrics, or do we need to start		The SMART program will allow for two data regimes within the program: constrained and unconstrained. In the constrained regime, Offerors will be required to use imagery resources, e.g., annotated training data and parallel corpora, provided or identified by		
			from the raw data?		the Government. Offerors should not expect that the Government will provide comprehensive data for algorithm development and training. In the unconstrained regime, Offerors are encouraged to propose additional imagery from other sources, subject to approval by the Government of the imagery corpus and particular conditions		
					for use. Specifically, in the unconstrained data regime, Offerors may not use proprietary datasets, unless these datasets are made available to all Performers in the SMART program without restriction. Moreover, for any dataset not provided by the Government, Offerors must provide the Government with an accounting of all resources		
					used and sources from which data are drawn and describe how the data will be used for development and training of algorithms.		
q	uestion 50	round 4	Can you provide a pointer to the CI/CD Framework documents referenced in footnote 4 on page 10 of the BAA?		See response to question 37.		
q	uestion 51	round 4	Is the GFE version of the API and framework bare-metal or cloud-based? If cloud-based, does the Government pay for the month-to-month cloud operations?	Page 18	Details of the architecture will be determined during Phase I, but it is expected that all algorithms, the API, the framework, and a complete SE&I of these components shall compile, install and run effectively on cloud services. All software components shall		
					compile readily on a Linux based operating system such as CentOS, Redhat or Ubuntu. (Page 18). This is a business decision on the part of the offeror. Please consider this when you address 4.B.1.b.E, Technical Resource Summary, in the cost breakdown table described in BAA section 4.B.1.c.F and in Appendix A 3. There are other sections of the		
q	uestion 52	round 4	If the GFE version of the API and framework is cloud-based, which provider or providers	Page 18	BAA to consider when making this decision such as 6.B.2 and evaluation criteria 5.A.1.c. Also, see responses to questions 26 and 28. See response to 51.		
			are used (e.g. Amazon, Microsoft, etc.)?				
q	uestion 53	round 4	If the Performer/Offeror uses a cloud-based framework, does the Performer/Offeror pay for month-to-month cloud operations?		See response to 51.		
	uestion 54 uestion 55		Should TA-2 offerors assume they will be provided with a Datacube with atmospheric correction already applied (resulting from TA-1 efforts of other offerors, or the Government)? Is IARPA receptive to us using other data such as Planet, for which we have to pay? Can	Page 11 Page 21	TA-2 Offerors will be provided with the SMART Datacube as described on Page 11 , Offerors are encouraged to propose additional imagery from other sources, subject		
q	uestion 33	Tound 4	we use our budget to purchase that? or do we have to pay out of pocket? Planet data is 3m repeat.	1 age 21	to approval by the Government of the imagery corpus and particular conditions for use. Specifically, in the unconstrained data regime, Offerors may not use proprietary datasets, unless these datasets are made available to all Performers in the SMART program without restriction. Moreover, for any dataset not provided by the		
					Government, Offerors must provide the Government with an accounting of all resources used and sources from which data are drawn and describe how the data will be used for development and training of algorithms. (Page 21) Additionally, due to the desire for		
					change detection models that are agnostic to geographic features, any data an Offeror proposes in a proposal or a Performer proposes to use once the SMART program has started shall be vetted by the IARPA to ensure the data are adequately environmentally and geographically-diverse. IARPA reserves the right to in its sole discretion decline any		
q	uestion 56	round 4	To what extent do you want us to focus on the Construction app in Phase 1? Do we get to apply our solution to other applications besides construction in Phase 1 or Phase 2? I	Page 7	The objective of the SMART program is not fine-grained object recognition, but rather broad-area search and categorization of the evolution of events or activities into discrete		
			apply our solution to other applications besides construction in Phase 1 or Phase 2? I understand you want our solutions to be general enough to apply to other applications besides construction.		broad-area search and categorization of the evolution of events or activities into discrete time-bound segments that can be automatically identified in time-series data. Applications of this capability range from foundational geospatial intelligence, disaster recovery, and humanitarian aid, to automated assessment of land-use trending for commercial purposes. (Page 7) The exemplar that the SMART program will use is heavy		
	uestion 57	round 4	Is IARPA receptive to using the NASA HLS data cube as it is state of the art and will be	Page 21	commercial purposes. (Page 7) The exemplar that the SMART program will use is heavy construction" Section 1.A See reponse to question 55.		
	uestion 58		available in the cloud with global coverage later this year. Responding to TA1 and/or TA2 -What is the anticipated dollar range of an individual	pg.31	The amount of resources made available under this BAA shall depend on the quality of	no	
	uestion 59	round 4	award by Phase (1, II, and III)? What is the average? How does this differ for a proposal just submitting to TA1 or TA2 only as opposed to TA1 and TA? Responding to TA1 and/or TA2 1.A. Program Overview p. 9 - If a team proposes to both		The amount of resources made available under this BAA shall depend on the quality of		
4			TA1 and TA2, but IARPA only deems one of the Technical Area responses as a strong enough for funding, will IARPA consider awarding funding for only that portion of the proposal?		the proposals received and the availability of funds. See Section 5.B.Method of Evaluation and Selection Process, pg. 49.		
q	uestion 60	round 4	"Responding to TA1 and/or TA2" 1.A. Program Overview 3. DevOps Environment How does IARPA define the level of risk associated with the use of open source tools? Does risk increase if the tools are maintained by non-US organizations? Community adoption? Is the incorporation of open source tools preferable in SE&I as opposed to certain technical		See response to Question # 40.		
q	uestion 61	round 4	"Responding to TA1 and/or TA2" 4.B.1.d. Section 4: Attachments - Open Source If we bring already developed (open-source) commercial technology to be part of the IARPA		The SMART program will emphasize creating and leveraging open source technology and architectures. Offerors are discouraged from proposing solutions based on		
	uestion 62	round 4	SMART solution and offer less than "Government Purpose Rights" (or "GPR") for this particular IP, how will that effect the evaluation of our proposal? TA-1 Data Fusion Sensors of interest for BAA - 1.A Program Overview p 7 and 1.A.1	Page 6	proprietary technologies. See Sections 4.B.1.d, Attachment 2, and 6.B.2 for more details on intellectual property (IP). Sensors may include, but will not necessarily be limited to those named in the BAA.		
q	- 02		SMART Program Expectations p. 13 - Different combinations of spectral sensors are referenced throughout the request. What specific spectral sensors are required to be fused together? Page 7 1.A Program Overview lists Landsat, Sentinel 2 and Worldview 3 as the sensors of interest. Whereas page 13 1.A.1 SMART Program Expectations references		January of more framed in the DAA.		
	uestion 63	round 4	Landsat, Sentinel-2, Hyperion, and Worldview 1,2, and 3 data will be provided as GFI. TA-1 Data Fusion Sensors of interest for BAA - In regards to the acquisition of the source	Page 6	The SMART Datacube provides a scalable data representation that allows dynamic		
q		Junu 1	TA-1 Data Fusion Sensors of interest for BAA - In regards to the acquisition of the source imagery component of TA1: Will there be spatial selection criteria and if so, what form should those limits take (e.g. basic polygon, complex polygon, countries) – or is a global collection expected?	Page 6	The SMART Datacube provides a scalable data representation that allows dynamic understanding and monitoring of the Earth through available, accurate, and up-to-date space-based observations. With a scalable data representation, SMART change detection algorithms shall also be scalable to allow transferability to provide an integrated change detection system that detects, monitors, and characterizes a variety of new events or		
q	uestion 64	round 4	TA-1 Data Fusion Sensors of interest for BAA - What range of bandwidth should we design for?	Page 6	detection system that detects, monitors, and characterizes a variety of new events or activities and the associated sequential phase changes. See response to 62.		
q	uestion 65	round 4	TA-1 Data Fusion / Data Cube - 1.A. Program Overview - 1.2 TA-1B SMART Datacube p 10 - The Datacube should grid the data to a common tiling grid, spatial resolution, and projection. Should it also assume a common temporal resolution (daily, every 5 days,		For the purposes of this solicitation the term Datacube is used to describe an approach to storing, processing and analyzing large collections of data from multiple satellite and other acquisitions systems to provide agile and flexible integrated analysis with vast amounts of gridded earth observations, see footnote #3 on page 10. Footnote 3 as a		
			weekly, etc.) as well?		amounts of gridded earth observations. see footnote #3 on page 10- Footnote 3 as a response for all: For the purposes of this solicitation the term Datacube is used to describe an approach to storing, processing and analyzing large collections of data from multiple satellite and		
	uestion 66	round 4	TA-1 Data Fusion / Data Cube - 1.A. Program Overview - 1.2 TA-1B SMART Datacube p		other acquisitions systems to provide agile and flexible integrated analysis with vast amounts of gridded earth observations. See response to 65.		
q			10 - Should imagery for one time period be spatially composited into a single observation (by selecting best available pixel, blending, or other compositing technique) or should each input image be stored as a separate data point, with the potential for multiple observations per time period?				
q	uestion 67	round 4	TA-1 Data Fusion / Data Cube - 1.A. Program Overview - 1.2 TA-1B SMART Datacube p 10 - Is it expected that the same common tiling grid, resolution and projection will be used throughout the system, or should the system expect to customize these parameters for		See response to 65.		
q	uestion 68	round 4	different regions as needed by downstream applications? TA-1 Data Fusion / Data Cube - 1.A. Program Overview - 1.2 TA-1B SMART Datacube p		See response to 65.		
			10 - For what criteria should the performance of the Datacube format be optimized - minimizing storage cost, extraction of large regions, querying time series data for individual pixels? Provided optimization criteria include: 1) performance, 2) data fusion, 3) ease of use for petabyte-scale scientific data analysis				

question 69	round 4	TA-1 Data Fusion / Data Cube - 1.A. Program Overview - 1.2 TA-1B SMART Datacube p		See response to 65.		
question 65	Tound 4	10 - The data fusion process will harmonize data from a number of sensors, each collecting a different set of spectral bands. Should the Datacube provide a minimum set of common bands across all sensors, a maximum set of bands across all sensors, or somewhere in		See response to 65.		
		between? If a band is not present in an acquisition from a given sensor, should the missing data be modeled or left as a gap in the Datacube?				
question 70	round 4	TA-1 Infrastructure - 1.A. Program Overview - Phase I-Base Period p 11 - What operating system(s) or framework(s) should we build upon? Is there flexibility? Must we support multiple systems/frameworks?		See response to question 37.		
question 71	round 4	TA-1 Infrastructure - 1.A. Program Overview - Phase I-Base Period p 12 - How much disk storage should we expect? Should we plan that raw imagery must be removed upon		See response to 65.		
question 72	round 4	TA-1 Infrastructure - 1.A. Program Overview - Phase I-Base Period p 13 - What are the	Table 1 on Page	See Table 1 on Page 25		
question 72	Tound 4	limits on parallelization in processing?	25	See Table 1 on 1 age 23		
question 73	round 4	TA-1 Standards - What technical requirements are there and what resources will be available on the deployment server that we should tailor our design to meet?		See response to question 37.		
question 74	round 4	TA-1 Standards 1.F Program Metrics p 24 - What are the standards against which the	Page 17	See questions stated on Page 17		
		target metrics in Table 1 (Calibration, Reflectance Accuracy, etc.) will be measured? Will validation data be provided?				
question 75	round 4	TA-2 Change Detection Scope of Evaluation - 1.A.3 TA-2 p 16 - Q1 Page 9 indicates that Offerors will be asked to produce algorithms which apply specifically to construction phases. However, Section 1.A.3. uses generic language and does not discuss construction.		The exemplar that the SMART program will use is heavy construction" Section 1.A. The SMART program's primary objective is to develop quantitative tools and techniques for automated broad-area search (BAS) to detect, monitor, and characterize		
				the progression of natural or anthropogenic events or activities using time-series spectral imagery from multiple space-based or air-borne sensors. Examples of such events or activities include heavy construction (as classified by the U.S. Department of Labor2),		
				real estate or urban development, crop disease propagation, forest fire, severe weather consequences such as flooding and mudslides, insect or battle damage, human migration, mining, logging, farming, and other natural events such as earthquakes.		
question 76	round 4	TA-2 Change Detection Scope of Evaluation - 1.A.3 TA-2 p 16, 17 - Will the evaluation of TA-2 be limited to construction?	Page 7	See reponse to 75.		
question 77	round 4	TA-2 Change Detection Scope of Evaluation - 1.A.3 TA-2 p 16 - Q1 If not, what types of	Page 7	See reponse to 75.		
question 78	round 4	progressive activities will be included in the evaluation? TA-2 Change Detection Acceptable Solutions - "TA-2 asks offerors to ""define sequential		See response to 34.		
		phases based solely on the characteristics of the data rather than pre-defined annotated training sets"". This seems to indicate that IARPA is expecting TA-2 to make use of unsupervised learning techniques. However, later questions make reference to labeled				
		training samples (Q4). From this it is unclear what machine learning techniques are acceptable within this scope. A few questions are motivated by this confusion.				
question 79	round 4	TA-2 Change Detection Acceptable Solutions - "Are the ML algorithms expected to be applied directly to the data or are they expected to produce rules which may be applied to the data?"	Page 17	The SMART Datacube provides a scalable data representation that allows dynamic understanding and monitoring of the Earth through available, accurate, and up-to-date space-based observations. With a scalable data representation, SMART change detection		
				algorithms shall also be scalable to allow transferability to provide an integrated change detection system that detects, monitors, and characterizes a variety of new events or activities and the associated sequential phase changes. (The SMART program's primary		
				objective is to develop quantitative tools and techniques for automated broad-area search (BAS) to detect, monitor, and characterize the progression of natural or anthropogenic events or activities using time-series spectral imagery from multiple space-		
question 80	round 4	TA-2 Change Detection Scheduling - TA-2 depends heavily upon the Datacube which is	Table 3 on Page	based or air-borne sensors.) See Table 3 on page 29		
4.2.52.0 ii 00		produced by TA-1. In fact, TA-2 is expected to "immediately fit" the Datacube using timeseries analysis tasks.	29			
question 81	round 4	TA-2 Change Detection Scheduling - Will TA-1 and TA-2 begin concurrently or will they be staggered?	Tables 2 and 3 on Pages 27 to	See Tables 2 and 3 on Pages 27 to 30		
question 82	round 4	TA-2 Change Detection Scheduling - 1.A.3 TA-2 p 16 - When will TA-2 be provided with	Tables 2 and 3	Tables 2 and 3 on Pages 27 to 30		
question 82		TA-2 Change Detection Scheduling - 1.A.5 1A-2 p 16 - When will 1A-2 be provided with data? TA-2 Change Detection Research Question Clarifications - Are sequential phases expected	on Pages 27 to 30 Page 17	The SMART Datacube provides a scalable data representation that allows dynamic		
question 63		to match the predefined labels or emerge from the data itself?	g:	understanding and monitoring of the Earth through available, accurate, and up-to-date space-based observations. With a scalable data representation, SMART change detection algorithms shall also be scalable to allow transferability to provide an integrated change		
				detection system that detects, monitors, and characterizes a variety of new events or activities and the associated sequential phase changes. Offerors shall leverage Phase I innovations to develop and refine algorithms to define sequential phases based solely on		
				the characteristics of the data rather than pre-defined annotated training sets from SMART imagery belonging to a well-defined sequential phase. It is anticipated that Offerors will propose innovative methods for transfer learning, as well as initialization		
				of probabilistic or algorithmic states." Section 1.A.3.		
question 84	round 4	TA-2 Change Detection Research Question Clarifications - 1.A.3 TA-2 p 16, 17 - Against which activities will transferability be measured? How is usefulness being defined?	Page 6	See response to 83.		
question 85	round 4	TA-2 Change Detection Research Question Clarifications - Do you expect the change rules mentioned in Q3 to be applied to the raw data or to the output of the models produced by Q 1 and 2?		See response to 83.		
question 86	round 4	TA-2 Change Detection Dataset Questions - 1.A.3 TA-2 p 17 - Will the training and test split be stratified?	Page 17	SMART datasets will be randomly divided into sequestered training data and testing data sets. Testing will be conducted independently on sequestered test data not seen by		
question 87	round 4	TA-2 Change Detection Dataset Questions - 1.A.3 TA-2 p 17 - How will the split be	Page 17	Performers. See response to 86.		
question 88	round 4	performed to ensure the test data is not overly biased towards a particular subset? TA-2 Change Detection Evaluation - 1.F Program Metrics p 24 - Does the \$50/km^2	Page 24	The computation efficiency metric is the cost to analyze a 1 degree X 1 degree X 1 year		
question 89	round 4	include storage, transport, etc. or only compute? TA-2 Change Detection Evaluation - 1.F Program Metrics p 24 - Is the only evaluation of	Page 17	datacube. Where the datacube contains all relevant data over one calendar year. SMART datasets will be randomly divided into sequestered training data and testing		
•		accuracy performance on the test set?	Tuge 17	data sets. Testing will be conducted independently on sequestered test data not seen by Performers.		
question 90	round 4	In the last year Draft BAA and slides presented at the industry day the area under consideration was 150 km x 150 km. In the BAA there is no mention about an area of regard since everything is thought of time and dollars / km2. However, when costing and		The > 8,000 square meters references the minimum size of the area, in which an event or activity Performers will be asked to identify occurs within a broad search area.		
		understanding how much resources to allocate, the geographic area under consideration should be considered. On page 10 of the BAA it is stated "The goal of TA-2 is to develop algorithms capable of BAS over areas >8,000 square meters using spaced-based time-series				
		imagery to detect and locate evolving natural or anthropogenic events or activities and detect and characterize the progression of the activities from the data as a function of time" We assume there is a typo about the BAS area and could mean 8000 km2.				
		Do you have an updated understanding of the area envisioned for processing for Phase 1, 2, and 3 of SMART?				
question 91	round 4	Can we assume that the main goal of the program is to handle multi(hyper) spectral EO satellite data and discard other modalities such as SAR?		See response to question 13		
question 92	round 4	Does the Government intend for all work on the awarded contract to be performed as unclassified? If classified work is anticipated, does the Government know at what level?	Page 35	The Government anticipates proposals submitted under this BAA will be UNCLASSIFIED.		
question 93	round 4	Are alternative commercial imagery sources allowed for use during this effort? Will bidders be penalized for leveraging additional data sources?		Offerors are encouraged to propose additional imagery from other sources, subject to approval by the Government of the imagery corpus and particular conditions for use.		
		Reference Text: 1. A.1. SMART Program Expectations 1. A.4. DevOps and System Engineering and Integration (SE&I)		Specifically, in the unconstrained data regime, Offerors may not use proprietary datasets, unless these datasets are made available to all Performers in the SMART program without restriction.		
question 94	round 4	1.D Offeror Data Will IARPA consider purchasing additional imagery data sets for use on the awarded		See response to 93		
		contracts in the form of Government Furnished Information (GFI) Reference Text: 1. A.1. SMART Program Expectations				
		1. A.4. DevOps and System Engineering and Integration (SE&I) 1.D Offeror Data				
question 95	round 4	Table 1 of the BAA states the following metric: Reflectance Accuracy ±0.04% (±0.02%) We think that ±0.04 (±0.02) or ±4% (±2%) may be what was meant. Could you confirm?	Page 25, Table	±0.04 (±0.02)		
question 96	round 4	Computational efficiency metrics in Table 1 do not address the time dimension. Is this cost per sq. km per unit time? Or cost per sq. km per stack of N images? If so, what is the		The computation efficiency metric is the cost to analyze a 1 degree X 1 degree X 1 year datacube, where the datacube contains all relevant data over one calendar year.		
		target time interval or number of images?				
question 97	round 4	Given that the current structure of Commercial Imagery provisioning under EnhancedView is expected to change with the NRO's next generation of commercial procurements prior to contract award, will IARPA consider one or both of the following		SMART will follow the license rights for use by the U.S. Government (USG) as established under the EnhancedView Contract.		
		options: 1) Revise SMART BAA language to state: Commercial imagery will be used in accordance with the provisioning of USG contracts, subject to the licensing and terms at the time of				
question 98	round 4	award? 2) Engage with the NRO CSPO Program Office to discuss how the NRO can support Do you have an updated understanding of the area envisioned for processing for Phase 1,		The goal of the SMART program is to automate the quantitative analysis of space-based		
		2, and 3 of SMART?		imagery to perform broad-area search (BAS) for natural and anthropogenic events and characterize their extent and progression in time and space.		
	Section 2 - AWARD INFORMATION					
	Section 3 - ELIGIBILITY					
question 1	INFORMATION round 1	We currently work at the ODNI. Are we prohibited to participate in this effort? It has nothing		3. A.1 Organizational Conflicts of Interest (OCI) - In accordance with FAR 9.5, Offerors are	no	See BAA pages 32 - 33; paragraphs 5-
question 2	round 1 Section 4 - PROPOSAL INFORMATON	We would like to know if non-US citizens, permanent residents and H1B visa holder may		Foreign entities and/or individuals may participate to the extent that such participants	no	See BAA paragaph 4 page 17
question 3 question 4	round 1 round 1	Paragraph 4.B.1.a Section 1: Cover sheet & Transmittal Letter states the following: "type Paragraph 4.B.1.d Section 4: Attachments. Attachment 10: Security Plan is "Not Applicable".	Paragraph Paragraph	There are two types of instruments that may be awarded under this BAA: procurement or The Government anticipates proposals submitted under this BAA will be UNCLASSIFIED	no no	See BAA page 6, footnote #1 See BAA page 35, paragraph 3
question 5 question 6 question 7	round 1 round 1 round 1	SMART Proposer's Day 29 May 2019. Request a list of attendees. SMART Proposer's Day 29 May 2019. Request a list of attendees. May I please get SMART Teaming info?		IARPA's website contains the Proposer's Day slides for SMART. It also includes vendors' See response to Question 5 See response to Question 5	no no no	
question 8 question 9 question 10	round 1 round 1 round 2	May I please have possible teaming information such as contact information of interested Hello SMART Team, I cannot find a list of the Industry Day attendees for this BAA. Can it be Can a university submit as a prime, along with a team consisting of two universities and an		See response to Question 5 See response to Question 5 Collaborative efforts and teaming arrangements among potential Offerors are strongly	no no no	See BAA Page 34, paragraph 2, Section 3.C.1
question 27 question 28	round 3	In 4.C.2 of the solicitation it indicates that the Offeror shall submit basic cost information, but not a full Cost Pronosal. This is a deviation from other government efforts that we According to 4.B.2, the Offeror would have 10 business days from notification by the		Yes, our process of only requesting full Cost Volumes from those offerors that have been determined selectable or selectable with modification may deviate from other. The intent is to have the Cost Volume submitted within 10 days after CO request. It is	no	See BAA Section 4.B.1c. Page 39, paragrph, 2. and Section 4.B.2 Volume: Cost Pronosal, Page 44.
question 29	round 3	In 4.B.2.b, the solicitation references an Excel document that is provided in Appendix B. Could you please provide the referenced Excel file? It does not seem to be attached as		Appendix B - Estimated Cost Breakdown - excel spreadsheet attached	no	
question 30 question 31	round 3	Could our SMART deliverables make calls to access imagery? Could we charge for a license as part of the SMART program?		This is a business decision on the part of the offeror in developing its technical and cost proposals. The proposal shall provide the detailed, in-depth discussion of the proposed. This is a business decision on the part of the offeror. Please consider this when you	no	See BAA Section 4.B.1.b - Section 2 Summary of Pronosal, Paragraphs A thru E, pages 38 - 39. See See BAA Section 4.B.1.b - Section 2 Summary of
question 116	round 4	The BAA asks for a brief biography of all key personnel in the detailed management plan. This will be very brief due to page limitations. Past IARPA BAAs have also allowed inclusion of two page resumes for each key person in the attachments. Are attached		The Detailed Management Plan does not require resumes. It should provide a brief biography of all Key Personnel (including alternates, if desired) and significant contributors who shall be involved in the research along with the amount of effort to be		See BAA page 40, Section 4.B.1.b - Section I.
question 117	round 4	resumes allowed? Cost, schedule, milestones submission, can the cost estimates for Option Period 1 and		expended by each person during the year. This is is a business decision on the part of the offeror. Please consider this when you		
question 117		Option Period 2 be provided as ROMs only?		address 4.B.1.b.E, Technical Resource Summary, in the cost breakdown table described in BAA section 4.B.1.c.F and in Appendix A 3. There are other sections of the BAA to consider when making this decision such as 6.B.2 and evaluation criteria 5.A.1.c.		
question 118	round 4	How will the government evaluate a proposal to proceed under an other transaction agreement (OTA)?		The Government will all evaluate proposals on the basis of technical and funding availability factors as outlined in Section 5.A		
question 119	round 4	1.D. Offeror Data - Are Offerors required to provide all labeled training data used to develop algorithms?		Offerors should not expect that the Government will provide comprehensive data for algorithm development and training (Page 21 of BAA)		
question 120	round 4	4.B.2.c. Section 3: Supporting Information - If the Offeror does not have a Forward Pricing Rate Agreement, but instead uses an average of actuals pricing practice for labor sectors are that data be used in lieu of powerly records are contingency bire letters with		Offerors should provide sufficient detail in their cost volume that allows for appropriate analysis evaluating the reasonableness of the offered prices. The Government will evaluate each proposals according to EAR 15 404 1 Proposal analysis techniques		
question 121	round 4	categories, can that data be used in lieu of payroll records or contingency hire letters with salary data to support each proposed labor category? Given that the current structure of Commercial Imagery provisioning under		evaluate cost proposals according to FAR 15.404-1 Proposal analysis techniques. SMART will follow the license rights for use by the U.S. Government (USG) as		
question 121		EnhancedView is expected to change with the NRO's next generation of commercial procurements prior to contract award, will IARPA consider one or both of the following options:		SMART will follow the license rights for use by the U.S. Government (USG) as established under the EnhancedView Contract.		
		1) Revise SMART BAA language to state: Commercial imagery will be used in accordance with the provisioning of USG contracts, subject to the licensing and terms at the time of award?				
		2) Engage with the NRO CSPO Program Office to discuss how the NRO can support IARPA needs writ large as well as specific to the SMART BAA? Reference Text:				
	Section 5 DDODOG	1. A.1. SMART Program Expectations 1. A.4. DevOps and System Engineering and Integration (SE&I)				
question 32	Section 5 - PROPOSAL REVIEW INFORMATION round 3	How will the government evaluate an offer for 'solely' proprietary offer or a hybrid offer		The SMART program will emphasize creating and leveraging open source technology	no	See BAA Sections 4.B.1.d - page 42 Attachment 2 and
	Section 6 - AWARD ADMINISTRATION	(including some open source and some proprietary technology)?		and architectures. Offerors are discouraged from proposing solutions based on		6.B.2 -Intellectual Property, page 51, paragraph 2 for
	INFORMATION				1	